

# Work Order ID 61813

Tuesday, September 07, 2010 12:43:40 PM



Page 1

Item ID: D4102-3

Revision ID:

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Required Date: 10/13/2010 Req'd Qty: 10.00

Reference:

Accept



Setup Start



Stop



Cust Item ID:

Customer:

Approvals:

Process Plan: *PH*

Date: *10-9-07*

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

Draw Nbr

Revision Nbr

D4102

B

100

Cut blanks as per folio

0.00



Bandsaw

Memo

0.00

Jeaspa Bandsaw

4.950" long

*OK 10/09/26*

*10*  
*+ 2*

110

0.00



HAAS 1

Memo

0.00

HAAS CNC vertical machine #1

MILL AS PER DWG AND FOLIO FA945

FOLIO REV: *B*  
DWG REV: *B*

*H.A 10/09/27*

*12*

DEBURR

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 61813**

Tuesday, September 07, 2010 12:43:40 PM

Page 2

Item ID: D4102-3

Accept

Revision ID:

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Required Date: 10/13/2010 Req'd Qty: 10.00

Reference:

Cust Item ID:

Customer:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00



QC

Memo

0.00

Quality Control

□□

H.A 10/09/27

12

Ø

130

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

Quality Control

SL 10/09/28

12

140

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

BR 10-09-29

13

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

**Work Order ID 61813**

Tuesday, September 07, 2010 12:43:40 PM

Page 3

Item ID: D4102-3

Accept

Setup Start

Revision ID:

Stop

Item Name: SHIM

Start Date: 9/7/2010 Start Qty: 10.00

Cust Item ID:

Required Date: 10/13/2010 Req'd Qty: 10.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

150

QC3- Inspect Part Finish

0.00

=&gt; JM

10/09/29

12

8



QC

Memo

0.00

Quality Control

160

Identify as per dwg &amp; Stock Location 123

0.00



Packaging

Memo

0.00

Packaging

10/9/29sf

1200

170

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

10/09/30sf

MF  
10-9-29

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Tuesday, September 07, 2010 12:43:44 PM

Page 1

Work Order ID: 61813



Parent Item: D4102-3



Parent Item Name: SHIM

Start Date: 9/7/2010

Required Date: 10/13/2010

Start Qty: 10.00

Required Qty: 10.00

Comments: IPP REV:A NEW ISSUE 10-07-05 JLM VERIFIED BY:DD

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.250X04.00 0		Purchased	No				f	15.8670	0.042	0.442105			



6061-T6 Bar .250 x 4.00

Location

Loc Qty

Loc Code

MAT

15.866978

15.866978

114608

115165

(.250x 6.00")

4.331 mfk 10/09/26

→ 7218 A.A 10/09/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DART AEROSPACE LTD		Work Order: 61813
Description: SHIM		Part Number: D410Z-3
Inspection Dwg: D4107 Rev: B		Page 1 of 1

### FIRST ARTICLE INSPECTION CHECKLIST

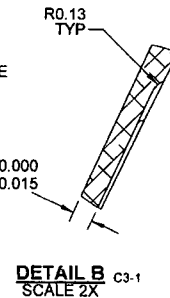
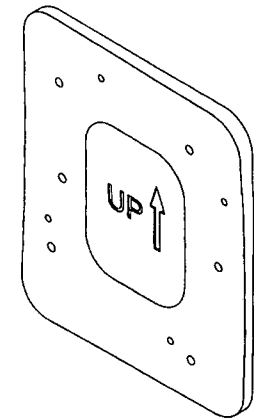
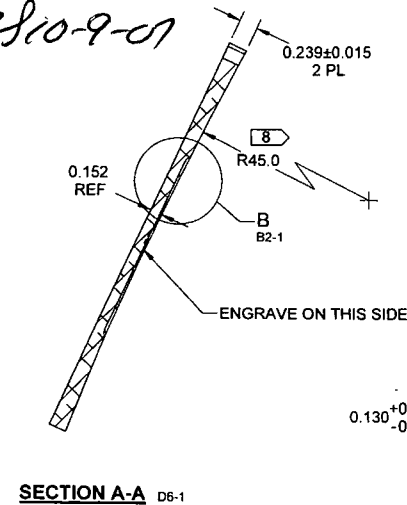
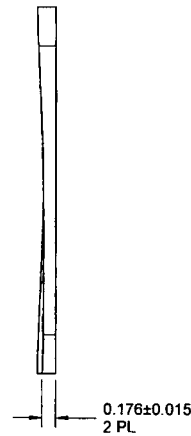
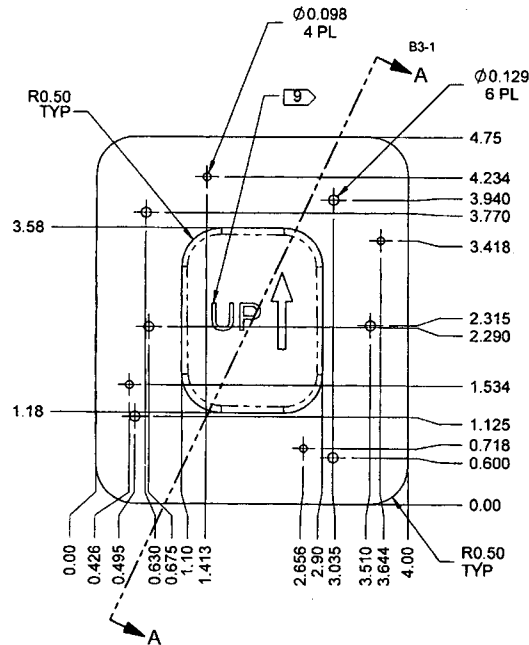
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.245	+/- .015	0.242	✓		Vern	GA-01
0.183	+/- .015	0.178	✓		"	"
3.653	+/- .010	3.653	✓		"	"
1.827	+/- .010	1.827	✓		"	"
0.55	+/- .030	0.550	✓		"	"
0.45	+/- .030	0.462	✓		"	"
3.100	+/- .010	3.100	✓		"	"
4.00	+/- .030	4.012	✓		"	"
R0.50	+/- .030	R0.500	✓		rad gage	ref.
Ø 0.129	+ .005 / - .001	Ø 0.130	✓		Vern	G-A 01
4.75	+/- .030	4.750	✓		"	"
0.205	+/- .015	0.192	✓		"	"
0.245	+/- .015	0.245	✓		"	"
R 34.4	+/- .0100	R 34.4	✓		rad gage	ref.
<del>0.205</del>	<del>+/- .015</del>	<del>0.192</del>	<del>✓</del>	<del></del>	<del>Vern</del>	<del>GA-01</del>
0.205	+/- .015	0.193	✓		Vern	GA-01

Measured by: J.A.	Audited by: SL	Preliminary Approval:
Date: 10/09/27	Date: 10/09/28	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

SHO COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 91813  
*8810-9-01*



D4102-1 SHIM



RELEASED  
2010-08-23  
NO

- NOTES:
- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC. M6061T6B
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-1" & B/N USING FINE POINT PERMANENT INK MARKER
  - 7) WEIGHT: 0.30 lbs
  - 8) SURFACE FINISH MINIMUM 250 MICROINCH
  - 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

B	RE-DESIGN D4102-1/2-3 (ZN B4-1, B4-2, B4-3)	RF	10.08.06
A	NEW ISSUE	RF	10.06.07
REV.	DESCRIPTION		DATE
DESIGN	RF	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA  DRAWING NO. <b>D4102</b>  TITLE <b>SHIM</b>  REV. B SHEET 1 OF 3 SCALE NTS	
DRAWN	RF		
CHECKED	<del>RF</del>		
MFG. APPR.	<del>RF</del>		
APPROVED	<del>RF</del>		
DE APPR.	<del>RF</del>		
DATE	10.08.06	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR CONTAINED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD</small>	

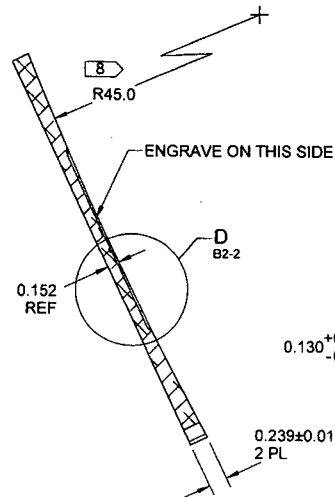
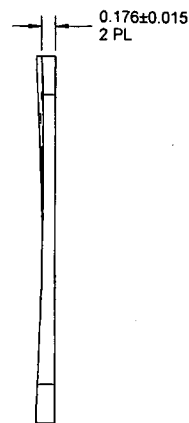
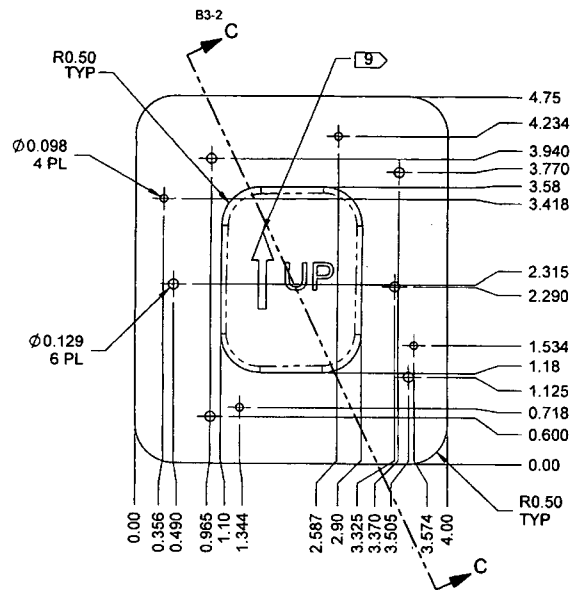
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

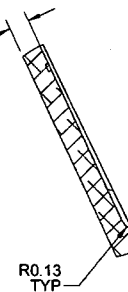
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



SECTION C-C D7-2



DETAIL D C3-2  
SCALE 2X

D4102-2 SHIM

RELEASED  
2010-08-23

NOTES:

- 1) MATERIAL: 6061-T6/T651/T6510/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC. M6061T6B
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-2" & B/N USING FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: 0.30 lbs
- 8) SURFACE FINISH MINIMUM 250 MICROINCH
- 9) ENGRAVE "UP & ARROW" TO A DEPTH OF MAXIMUM 0.020 IN THIS LOCATION WITH A TOOL TIP RADIUS OF 0.063

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	<i>[Signature]</i>	DRAWING NO.	REV. B
MFG. APPR.	<i>[Signature]</i>	D4102	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	SHIM	NTS
DATE	10.08.06	<small>COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.</small>	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

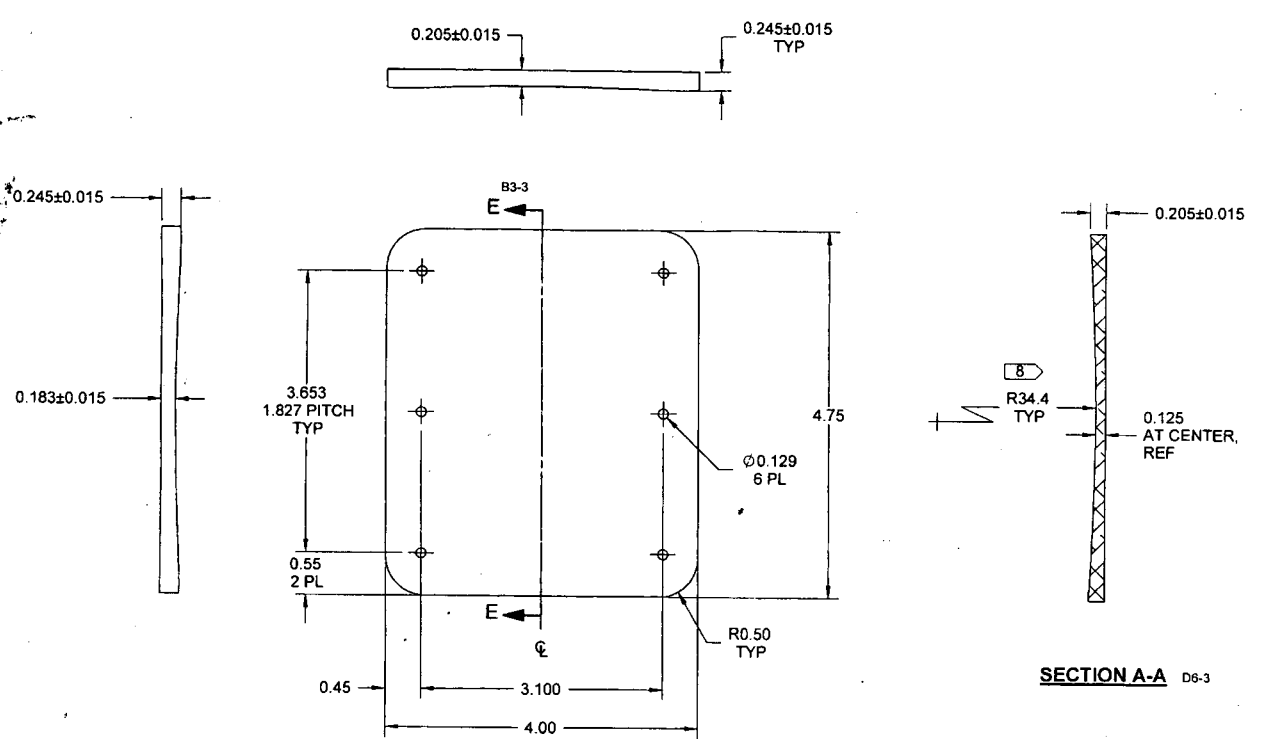
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

8 7 6 5 4 3 2 1



WLO 41813

SECTION A-A D6-3

D4102-3 SHIM

RELEASED  
2010-08-23  
MP

- NOTES:
- 1) MATERIAL: 6061-T6/T651/T6511/T62 ALUMINUM BAR  
QQ-A-225/8 OR AMS-QQ-A-225/8 (OR AMS 4117/4128/4115/4116)  
OR QQ-A-200/8 OR AMS-QQ-A-200/8 (OR AMS 4160)  
OR ASTM B211 OR ASTM B221  
PER DART SPEC. M6061T6B
  - 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
  - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
  - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
  - 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
  - 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4102-3" & B/N USING FINE POINT PERMANENT INK MARKER
  - 7) WEIGHT: 0.31 lbs
  - 8) SURFACE FINISH MINIMUM 250 MICROINCH

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED		DRAWING NO.	REV. B
MFG. APPR.		D4102	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		SHIM	NTS
DATE	10.08.06	COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. IT IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries